



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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RENEWAL OF APPROVAL FOR REMEDIAL USE
Pursuant to Title, 310 CMR 15.00

Name and Address of Applicant:

Bord na Mona Environmental Products U.S. Inc.
4106 Bernau Avenue
Greensboro, NC 27407

Trade name of technology and model: **Puraflo Peat Fiber Biofilter** (hereinafter called the "System")
Schematic drawings illustrating the models and an Inspection checklist are part of this approval.

Transmittal Number: W 149450

Date of Issuance: November 30, 2007, modified January 18, 2008.

Expiration date: November 30, 2012

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Approval for Remedial Use to: Bord na Mona Environmental Products U.S. Inc., 4106 Bernau Avenue, Greensboro, NC 27407 (hereinafter "the Company"), approving the System described herein for Remedial Use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on compliance by the Company and the System owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

A handwritten signature in black ink, appearing to read "Glenn Haas".

Glenn Haas, Acting Assistant Commissioner
Bureau of Resource Protection

January 18, 2008
Date



I. Purpose

1. The purpose of this Approval is to allow use of the System in Massachusetts, on a Remedial Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Approval for Remedial Use authorizes the use and installation of the System in Massachusetts.
3. The System may only be installed on facilities that meet the criteria of 310 CMR 15.284(2).
4. This Approval for Remedial Use authorizes the use of the System where the local approving authority finds that the System is for upgrade of a failed, failing or nonconforming system and the design flow for the facility is less than *10,000* gallons per day (GPD).

II. Design Standards

1. The System is an aerobic peat based treatment system comprised of modules made of linear low-density polyethylene (LLDPE), which contain the peat fiber. Each module has a capacity of 150 GPD. Effluent from the septic tank is collected in the pump chamber and pumped using a time dosing system activated by programmable timer with a high water level override and high water alarm set three inches higher than the high water setting. The alarm shall be connected to an independent power source run from the main power source of the facility. The pump chamber shall have storage volume above the high water setting equal to one days design flow.
2. The peat fiber is a proprietary product, which is comprised of undecomposed roots of bog cotton, and bog sedges with an approximate loose density of 22-28 pounds per cubic foot and an organic matter content greater than 95%. Wastewater from the pump chamber is pumped to the module and sprayed over the surface of the peat. After percolating through the peat, the filtrate is collected in the bottom of the module. Effluent is discharged through a drain pipe assembly, and a manifold system, sized in accordance with System manufacturer's recommendations, which intercepts all module effluent and discharges to a pump chamber for pressure distribution to the soil absorption system (SAS).
3. The System shall be installed in series between a septic tank designed in accordance with 310 CMR 15.223 – 15.228 and the SAS of a system designed and constructed in accordance with 310 CMR 15.100 - 15.279, subject to the provisions of this Approval.
4. The discharge from the septic tank shall be equipped with an approved Effluent Tee Filter.
5. Pressure distribution designed in accordance with Department guidance is required for all installations of the System.
6. The System may be used in soils with a percolation rate of up to 90 minutes per inch (MPI). For soils with a percolation rate of 60 to 90 MPI, the effluent loading rate shall be 0.15 gpd/sq. ft.

III. Allowable Soil Absorption System Design

1. The following reductions are allowable for Soil Absorption Systems (SAS) when designing the System.
 - A. The approving authority may allow up to a 50 percent reduction in the area of the soil absorption system required by 310 CMR 15.242; or
 - B. The approving authority may allow a reduction in the required separation between the bottom of the SAS and the high groundwater elevation of up to two feet. This provides a minimum separation of two feet (in soils with a recorded percolation rate of more than two minutes per inch) or a three feet (in soils with a recorded percolation rate of two minutes or less per inch); or
 - C. The approving authority may allow a reduction in the required four feet of naturally occurring pervious material in an area with no less than two feet of naturally occurring pervious material, provided that it has been demonstrated that the four foot requirement cannot be met anywhere on the site.

EXCEPTION: If a remedial System needs more than one of the allowable reductions listed above, then the reductions must first be approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284 through filing a BRPWP 64c permit application.

2. Additional reductions allowable for Soil Absorption System (SAS) when designing the System:
 - A. When using 1A, 1B, or 1C above for the System where full compliance with 310 CMR 15.000 is not feasible, the local approving authority may consider granting local upgrade approvals in accordance with the provisions of 310 CMR 15.401 – 15.405.

For example:

- i. When an applicant chooses up to a 50 % reduction in the SAS area with the use of I/A technologies, the local approving authority may grant a local upgrade approval for reduction to estimated high groundwater in accordance with 310 CMR 15.405(1)(h).
 - ii. When an applicant chooses up to a two foot reduction in the estimated separation of high groundwater from the bottom of the SAS area with an I/A technology, the local approving authority may consider granting a local upgrade approval for SAS reduction in accordance with 310 CMR 15.405(1)(c).
 - iii. When an applicant chooses a reduction in the naturally occurring soil with the use of an I/A technology, a local upgrade approval may grant either a reduction in SAS area in accordance with 310 CMR 15.405(1)c or a reduction in groundwater separation in accordance with 310 CMR 15.405(1)(h).
- B. If any remedial system is still not able to achieve full compliance with all of the minimum set back distances in 310 CMR 15.211, even taking into account provisions for local upgrade approval in accordance with the provisions of 310 CMR 15.401 – 15.405 the applicant must obtain variance(s) from the approving authority and then approval from the Department pursuant to 310 CMR 15.410 through filing a BRPWP 59c permit application.

IV. General Conditions

1. All provisions of 310 CMR 15.000 are applicable to the use of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Approval.
2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan. Any required sample analysis shall be conducted by an independent U.S.EPA or DEP approved testing laboratory, or a DEP approved independent university laboratory. It shall be a violation of this Approval to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.
3. The facility served by the System and the System itself shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.
4. In accordance with applicable law, the Department and the local approving authority may require the System owner to cease operation of the system and/or to take any other action as it deems necessary to protect public health, safety, welfare and the environment.
5. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sewer system. No System shall be installed, upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004. When a sanitary sewer connection becomes feasible, the facility served by the System shall be connected to the sewer, within 60 days of such feasibility, and the System shall be abandoned in compliance with 310 CMR 15.354, unless a later time is allowed, in writing, by the approving authority.
6. Design, installation and operation shall be in strict conformance with the Company's DEP approved plans and specifications, 310 CMR 15.000 and this Approval.
7. Pressure distribution designed in accordance with Department guidance is required for all installations of the System.

V. Conditions Applicable to the System Owner

1. The System is approved for the treatment and disposal of sanitary sewage only. Any wastes that are non-sanitary sewage generated or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed.
2. Effluent discharge concentrations shall meet or exceed secondary treatment standards of 30 mg/L biochemical oxygen demand (BOD₅) and 30 mg/L total suspended solids (TSS). The effluent pH shall not be less than 6.0 or more than 9.0 standard units (S.U.).
3. Any effluent samples shall be taken at a flowing discharge point, i.e. distribution box, pump chamber or other Department approved location downstream of the treatment unit. Any required influent sample shall be taken at a point that will provide a representative sample of the influent. The system designer, subject to written approval by the Department, shall determine influent sampling locations.

4. The System owner shall have the Company or its designee conduct a design review for any proposed non-residential System or System with a design flow 2,000 GPD or greater to ensure that the proposed use of the System is consistent with the unit's capabilities.
5. Operation and Maintenance Agreement:
 - A. Throughout its life, the owner shall operate and maintain the System in accordance with the Company and designer's operation and maintenance requirements and this Approval. To ensure proper operation and maintenance (O&M), the owner shall enter into an O&M agreement. No O&M agreement shall be for less than one year.
 - B. No System shall be used until an O&M agreement is submitted to the approving authority which:
 - i. Provides for the contracting of a person or firm trained by the Company as provided in Section VI (6) and competent in providing services consistent with the System's specifications, with the operation and maintenance requirements specified by the Company and the designer, and with any specified by the Department;
 - ii. Contains procedures for notification to the Department and the local board of health within five days of a System failure or alarm event and for corrective measures to be taken immediately; and
 - iii. Provides the name of an operator, which must be a Massachusetts certified operator if one is required by 257 CMR 2.00, that will operate and monitor the System. The operator must inspect and field test Systems installed at single family homes at least every six months in accordance with the Department's policy and anytime there is an alarm event, and for all other Systems at least every three months and anytime there is an alarm event. This Department policy, *Inspection and Sampling in Title 5 I/A Single Family Home Remedial and General Use Treatment Systems with Design Flows Less than 2000 gallons/day* can be viewed on the internet at <http://mass.gov/dep/water/wastewater /iatechs. htm>.
 - iv. For all other Systems the operator must inspect and maintain the System at least every three months and anytime there is an alarm event.
6. Effluent from the System serving a single family residential facility shall be field tested in accordance with Department policy. For non-residential facilities and all facilities with design flows of 2,000 GPD or greater, System effluent shall be sampled for laboratory analysis at least quarterly for the following parameters: pH, BOD₅, and TSS.
7. The System owner shall at all times have the System properly operated and maintained in accordance with this Approval, the designer's operation and maintenance requirements and the Company's approved procedures and sampling protocols. The System owner shall notify the Department and the local approving authority in writing within seven days of any cancellation, expiration or other change in the terms and/or conditions of their O&M agreement.
8. Prior to transferring any or all interest in the property served by the System, or any portion of the property, including any possessory interest, the System owner shall provide written notice of all conditions contained in this Approval to the transferee(s). Any and all instruments of transfer and any leases or rental agreements shall include as an exhibit attached thereto and made a part thereof a

copy of this Approval for the System. The System owner shall send a copy of such written notification(s) to the Department and local approving authority within 10 days of such notice being given.

9. By January 31st of each year for the previous year, the System owner shall submit to the local approving authority all data collected in accordance with item 6, above, including all Department Title 5 IA O&M checklists and System technology checklists completed during the previous calendar year by the System operator for each inspection performed.
10. Prior to the issuance of a Certificate of Compliance for the System, the System owner shall record and/or register in the appropriate Registry of Deeds and/or Land Registration Office, a Notice disclosing both the existence of the alternative septic system subject to this Approval on the property and the Department's approval of the System. If the property subject to the Notice is unregistered land, the Notice shall be marginally referenced on the owner's deed to the property. Within 30 days of recording and/or registering the Notice, the System owner shall submit the following to the Department and the local approving authority: (i) a certified Registry copy of the Notice bearing the book and page/instrument number and/or document number; and (ii) if the property is unregistered land, a Registry copy of the owner's deed to the property, bearing the marginal reference.

VI. Conditions Applicable to the Company

1. By January 31st of each year, the Company shall submit a report to the Department, signed by a corporate officer, general partner or Company owner that contains information on the System, for the previous calendar year. The report shall state: the number of units of the System sold for use in Massachusetts including the installation date and date of start-up during the previous year; the address of each installed System, the owner's name and address, the type of use (e.g. residential, commercial, institutional) and the design flow; and for all Systems installed since the date of issuance of this Approval, all known failures, malfunctions, and corrective actions taken and the address of each such event.
2. The Company shall notify the Director of the Wastewater Management Program at least 30 days in advance of the proposed transfer of ownership of the technology for which this Approval issued. Said notification shall include the name and address of the proposed new owner and a written agreement between the existing and proposed new owner containing a specific date for transfer of ownership, responsibility, coverage and liability between them. All provisions of this Approval applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.
3. The Company shall develop and submit to the Department within 60 days of the effective date of this Approval: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; and a recommended schedule for maintenance of the System essential to consistent successful performance of the installed Systems.
4. The Company shall develop and submit to the Department within 60 days of the effective date of this Approval a standard protocol essential for consistent and accurate measurement of

performance of installed Systems, including procedures for sample collection and analysis of the System. The protocol shall be in accordance with the latest edition of *Standard Methods for the Examination of Water and Wastewater*.

5. The Company shall make available, in print and electronic format, the referenced procedures and protocol in Section VI (3) and (4) to owners, operators, designers and installers of the System.
6. The Company shall institute and maintain a program of operator training and continuing education, as approved by the Department. The company shall update the list of qualified operators and make the list known to users of the technology.
7. The Company or its designee shall conduct a design review of the System prior to the sale of any model with a design flow 2,000 GPD or greater to ensure that the proposed use of the System is consistent with the unit's capabilities.
8. The Company shall furnish the Department any information that the Department requests regarding the System within 21 days of the receipt of that request.
9. The Company shall include copies of this Approval and the procedures and protocol described in Section VI (3) and (4) each System that is sold. Also, in any contract executed by the Company for distribution or re-sale of the System, the Company shall require the distributor or re-seller to provide each purchaser of the System with copies of this Approval and the procedures and protocol described in Section VI (3) and (4).
10. The Company shall comply with 310 CMR 15.000 and all the Department policies and guidance that apply and as they may be amended from time to time.
11. If the Company wishes to continue this Remedial Use Approval, the Company shall apply for and obtain a renewal of this Approval. The Company shall submit a renewal application at least 180 days before the expiration date of this Approval, unless the Department has granted permission for a later date in writing. This Approval shall continue in force until the Department has acted on the renewal application.

VII. Conditions Applicable to Installers of the System

1. Each Installer shall install the System in accordance with Company training on the installation of the System and the conditions of this Certification.
2. No Installer shall install the System unless the Installer has been trained by the Company on installation of the System.

VIII. Reporting

1. All notices and documents required to be submitted to the Department by this Approval shall be submitted to:

Director
Wastewater Management Program

Department of Environmental Protection
One Winter Street - 5th floor
Boston, Massachusetts 02108

IX. Rights of the Department

1. The Department may suspend, modify or revoke this Approval for cause, including, but not limited to, non-compliance with the terms of this Approval, non-payment of the annual compliance assurance fee, for obtaining the Approval by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Approval, or as necessary for the protection of public health, safety, welfare or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Approval and/or the System against the owner, or operator of the System and/or the Company.

X. Expiration Date

1. Notwithstanding the expiration date of this Approval, any System sold and installed prior to the expiration date of this Approval, and approved, installed and maintained in compliance with this Approval (as it may be modified) and 310 CMR 15.000, may remain in use unless the Department, the local approving authority, or a court requires the System to be modified or removed, or requires discharges to the System to cease.